

PC3320 Wireless Network Card

Installation Guide

2130361
Rev 1.0



Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the modem are used in a normal manner with a well-constructed network, the modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Verizon accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the modem, or for failure of the modem to transmit or receive such data.

Safety and Hazards

Do not operate the modem in areas where blasting is in progress, where explosive atmospheres may be present, near medical equipment, near life support equipment, or any equipment which may be susceptible to any form of radio interference. In such areas, the modem **MUST BE POWERED OFF**. The modem can transmit signals that could interfere with this equipment.

Do not operate the modem in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the modem **MUST BE POWERED OFF**. When operating, the modem can transmit signals that could interfere with various onboard systems.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. The modem may be used at this time.

The driver or operator of any vehicle should not operate the modem while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

Limitation of Liability

The information in this manual is subject to change without notice and does not represent a commitment on the part of Verizon. VERIZON AND ITS AFFILIATES SPECIFICALLY DISCLAIM LIABILITY FOR ANY AND ALL DIRECT, INDIRECT, SPECIAL, GENERAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUE OR ANTICIPATED PROFITS OR REVENUE ARISING OUT OF THE USE OR INABILITY TO USE ANY VERIZON PRODUCT, EVEN IF VERIZON AND/OR ITS AFFILIATES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR THEY ARE FORESEEABLE OR FOR CLAIMS BY ANY THIRD PARTY.

Notwithstanding the foregoing, in no event shall Verizon and/or its affiliates aggregate liability arising under or in connection with the product, regardless of the number of events, occurrences, or claims giving rise to liability, be in excess of the price paid by the purchaser for the product.

Patents

Portions of this product are covered by some or all of the following US patents:

5,515,013	5,617,106	5,629,960	5,682,602	5,748,449	5,845,216	5,847,553
5,878,234	5,890,057	5,929,815	6,169,884	6,191,741	6,199,168	6,327,154
6,339,405	6,359,591	6,400,336	6,643,501	6,516,204	6,561,851	6,653,979
D367,062	D372,248	D372,701	D416,857	D442,170	D452,495	D452,496
D453,733	D459,303					

and other patents pending.

This product includes
technology licensed from

QUALCOMM®
3G CDMA

QUALCOMM Incorporated under one or more of the following United States patents and/or their counterparts in other nations:

4901307	5056109	5101501	5109390	5228054	5267261	5267262	5337338
5414796	5416797	5490165	5504773	5506865	5511073	5535239	5544196
5568483	5600754	5657420	5659569	5710784	5778338		

Copyright

©2004 Sierra Wireless. All rights reserved.

Trademarks

Windows® is a registered trademark of Microsoft Corporation.

Qualcomm® is a registered trademark of Qualcomm Incorporated.

InstallShield® is a registered trademark and service mark of InstallShield Corporation.

Other trademarks are the property of the respective owners.

Table of Contents

Introducing the PC3320 Wireless Network Card	7
Welcome	7
Feature summary	7
Network card	7
Modem	8
Other	8
CDMA 1X services	8
Additional PC3320 features	9
Package contents	9
System components	9
Your host computing device	9
The PC3320 wireless network card	9
The PC3320 card drivers and enabling software	10
A CDMA service provider account	10
The CDMA wireless network	11
 Care and Maintenance of Your PC3320 card	 13
 Getting Started	 15
The PC3320 software	15
Account activation and configuration	15
 Installation	 17
System requirements	17
PC3320 card software installation procedures	18
Venturi™ Software Installation	19
Card insertion and removal	20
Inserting the PC3320 card	20
Removing the PC3320 card	20

Activation	21
Account configuration procedures	21
Activation Wizard	21
Manual activation	22
Automated activation	22
 Mobile Connection Manager™ Basics	 23
Starting and closing Mobile Connection Manager	23
Components of the Mobile Connection Manager window	24
Window controls	24
Docking	25
Always On Top	25
Interpreting icons	25
Connection Status Area	26
Call Status Area	27
Indicator area	27
Minimized Icons	28
Online Help	28
Troubleshooting	29
 Technical Specifications	 31
LED operation	31
Radio frequency and electrical specifications	32
Environmental specifications	32
 Glossary	 33

1: Introducing the PC3320 Wireless Network Card

- Welcome
- Feature Summary
- Package Contents
- System Components

Welcome

Note: Do not insert the PC3320 card into your PC Card slot prior to installing the software. It is important to install the software and driver in the correct order. For detailed procedures, see page 17.

The PC3320 wireless network card is a dual-band wireless PC Card for cellular and North American PCS networks. It enhances the functionality of your mobile computing devices by adding wireless data and 2-way messaging.

The PC3320 functions as a wireless network card (with LAN-like connectivity), and a modem. This card allows you to connect to the Internet, send and receive e-mail, connect to a corporate network, without the need of a network cable or phone line.

Feature summary

Note: For step-by-step instructions to access features of the PC3320, consult the online help available with Mobile Connection Manager.

The PC3320 wireless network card is designed to provide a wide range of capabilities using CDMA network technology. Implementation of these features will depend on the particular service provider and account features you have chosen.

Some features described in this manual may not be supported by your service provider or may not be available with your network account. Contact your service provider for details of the services and accounts available.

Network card

During high-speed packet connections, the PC3320 is a true network card, functioning just like the network cards familiar to most corporate computer users. Once installed and configured, the PC3320 card can connect to the CDMA

network automatically. You just insert the PC3320, start Mobile Connection Manager and allow it to authenticate your account on the network, then launch your Internet browser—you're online!

Modem

As a modem, the PC3320 allows you to dial up any other modem (such as a corporate server).

Other

Short Messaging Service (SMS) is available to exchange brief text messages with other CDMA subscribers.

CDMA 1X services

The PC3320 operates over a type of wireless network called CDMA (Code Division Multiple Access).

CDMA 1X technology provides a variety of connectivity features, depending on your service provider and account:

- **NationalAccessSM** high-speed packet data, sometimes known as 1X, supports Internet connections with data rates up to 153.6 kbps (downlink from the network) and 76.8 kbps (uplink to the network). Actual speed will depend on the network conditions. With this type of connection, the PC3320 card functions as a network card.

Once the connection is established, you can open your browser and connect to any web site that is accessible through the Internet, or access other Internet services (such as e-mail).

Note: You may increase your data transmission speed by using compression software. Contact your service provider for details.

- **Circuit switched (dial-up) data**, using the earlier CDMA IS-95 specification, supports data connections to any dial-in service at rates up to 14.4 kbps. Using Venturi data compression, the maximum data rate is 56 kbps.
- **Quick 2 NetSM**, provides a simplified way to dial into an Internet connection (using circuit switched data).
- **SMS (Short Message Service)**, allows you to send and receive short text messages using the PC3320 card.

Additional PC3320 features

Beyond the features of the CDMA network, the PC3320 provides additional software features:

- PIN security code to protect your PC3320 card and account from unauthorized use.
- An Activation Wizard (page 21) to assist with configuring your CDMA accounts. The PC3320 supports two accounts.
- Sound options to customize ringtones for SMS messages.
- A Call Log to track outgoing calls and determine the amount of data transferred.

Package contents

Your PC3320 package contains the following components:

- PC3320 wireless network card
- Antenna
- Installation CD containing the PC3320 card software and this installation and troubleshooting guide
- Quick Start Guide
- Warranty Card

System components

Your PC3320 wireless network card is just one part of a system designed to provide you with a wide range of communication features. Every component of the system is needed to enable these capabilities.

Your host computing device

Your notebook hosts the PC3320 card hardware and runs the communication software: your web browser and e-mail application, and Mobile Connection Manager—the PC3320 card enabling software.

You may also have other software on your computer that can be used wirelessly with the PC3320, such as: file transfer applications (FTP), chat or instant messaging, a VPN (Virtual Private Network) client, client software for a corporate server application.

The PC3320 wireless network card

Along with the antenna, this equips your computer with a radio modem.

The PC3320 card fits into a standard Type II PC Card slot available on most notebook PCs.

Every CDMA network operates on one of three radio frequency bands. As a dual-band product, the PC3320 operates on two of these bands (see page 32), providing a wide coverage area.

The PC3320 provides all the advantages of 1X where it is available while allowing you to use the older CDMA IS-95 standard where 1X has not yet been implemented. The benefits to you are that you can use the PC3320 card in any area that has coverage (assuming there are no account restrictions) and you will be able to take advantage of the fastest possible data transmission speed.

The PC3320 card drivers and enabling software

Required to control, monitor, and manage your wireless connections, this includes the Mobile Connection Manager application. The device drivers are the software that enables the PC3320 card to work with your computer's operating system.

The PC3320 card comes with a CD containing this software:

- Mobile Connection Manager application that you use to manage the PC3320 card and monitor your connections. Use the application's online help for step-by-step instructions to access features of Mobile Connection Manager.
- Venturi compression software that increases data throughput, effectively increasing the data transmission speed
- The device driver software that provides the interface between the PC3320 and your Windows® operating system.

The driver and application software *must* be installed before you insert the PC3320 for the first time. Detailed instructions are provided in the following chapter.

A CDMA service provider account

Companies that operate CDMA networks and provide access to these networks are called *service providers*. You must have an account with a CDMA service provider to use the PC3320.

Note: You can use the Lock Code feature to prevent others from using your account should your PC3320 card be stolen. See the online help for information on this feature.

Each service provider has its own pricing options. There may be flat rate accounts, which provide you a maximum number of minutes of network usage for a fixed monthly fee. There may be accounts for which you are charged for network usage by the minute or by the amount of data transmitted.

Your account may include a variety of other services such as SMS messaging.

Each PC3320 has been provisioned at the factory for use with a particular service provider. This sets the PC3320 card to use particular radio channels and enables services specific for that provider.

The process of setting up your account is called *activation*. Activation involves action by the service provider and configuration of the PC3320.

The procedure to configure (activate) your PC3320 card is covered in “Activation” on page 21.

The CDMA wireless network

Note: More information about CDMA networks is available on the CDMA Development Group web site, www.cdg.org.

This is the worldwide infrastructure providing the radio coverage that allows you to stay connected. Made up of radio towers, and a variety of network switches, routers, and servers, the network is an interconnection of many service provider companies.

Note: Most service providers have coverage maps on their web sites.

There are CDMA networks that operate in the frequency bands supported by the PC3320 throughout North America and parts of Latin America, Asia, New Zealand, and Australia. However, each service provider operates a network that covers a limited geographical area within the overall CDMA coverage area.

Note: The fee for service is usually higher when you are roaming (connecting to a network other than the one belonging to your service provider). The Call Guard feature (subject to feature availability) can warn you before making or answering calls while roaming.

Most service providers have “roaming” agreements with other service providers, so that they can offer service outside of the coverage area of their own networks. For example, assuming you live in Vancouver and travel frequently to Seattle, you can obtain an account with a Vancouver service provider that has a roaming agreement with a service provider in Seattle. You would then have local service in Vancouver, and roaming service in Seattle. (Most service providers charge more for roaming service than local service.)

2: Care and Maintenance of Your PC3320 card

As with any electronic device, the PC3320 card must be handled with care to ensure reliable operation. Follow these guidelines in using and storing the PC3320 card:

- Do not apply adhesive labels to the PC3320 card. This may cause the PC3320 card to become jammed inside the card slot.
- Optimal signal strength is usually obtained when the antenna is perpendicular to the modem. The antenna should bend easily at the hinge. Do not forcefully bend the antenna.
- When storing or transporting your PC in a case (such as a notebook case), remove the PC3320 card antenna and store it in a compartment where it cannot be crushed or broken.
- The PC3320 card should fit easily into your PC Card slot. Forcing the PC3320 card into a slot may damage connector pins.
- Protect the card from liquids, dust, and excessive heat.
- When not installed in your computer, store the PC3320 card in a safe place.

3: Getting Started

- The PC3320 Software
- Account Activation and Configuration

Before you can begin using the PC3320 wireless network card, you must:

1. Install the PC3320 enabling software and driver.
2. Activate an account and configure the PC3320 card to use your account (unless the PC3320 card has been pre-activated).

This section provides an overview of this process.

The PC3320 software

The PC3320 card comes with this software:

- Mobile Connection Manager application that you use to manage the PC3320 card and monitor your connections
- The driver software that provides the interface between the network card and your Windows operating system

Note: When you have the Venturi software installed and enabled, the compression will automatically be used where it is available on the network. In areas where the Venturi server is implemented, you should notice an increase in the speed of your dial-up data connections.

- Venturi compression software that increases data throughput, effectively increasing the data transmission speed

The Mobile Connection Manager software should be installed before you insert the PC3320 for the first time. The Venturi software should only be installed after the driver is installed. Detailed instructions are provided in “Installation” on page 17.

Account activation and configuration

You must have an account with a CDMA service provider to use the PC3320. The process of setting up an account is called *activation*.

If you purchased the PC3320 directly from a service provider, you may already have an account; your PC3320 card may be pre-activated.

Unless your PC3320 card has been pre-activated, Mobile Connection Manager automatically detects that no account has been configured when you run it for the first time. Mobile Connection Manager then runs the Activation Wizard to guide you through the activation and configuration process.

Configuring the PC3320 card involves setting the phone number assigned by your service provider and may involve entering other network parameters and settings.

Your service provider needs to know:

- The billing information to use to collect payment for your network usage.
- The ESN (Electronic Serial Number) assigned to your modem during the manufacturing process. (The ESN is printed on a label on the PC3320 and can be displayed in Mobile Connection Manager.) This number is used to help authenticate your account when you connect for service.

You require from your service provider:

- An activation code that gives you access to configure the account
- A phone number for your PC3320 card
- Additional information specific to your service provider such as:
 - A SID (System IDentifier) that identifies your home network area and is used in conjunction with your phone number to determine if you are “home” or “roaming”.

4: Installation

- System Requirements
- Installation on Windows 98, Me, 2000 and XP
- Venturi Software Installation
- Card Insertion and Removal

This chapter guides you through the steps necessary to install the PC3320 card on a notebook PC.

Note: Do not insert the PC3320 card into your PC Card slot before installing the software.

The basic steps are:

1. Insert the PC3320 installation CD into your CD-ROM drive and install Mobile Connection Manager.
2. Insert the PC3320 card into the PC Card slot (refer to page 20) to install the PC3320 card drivers.
3. Install the Venturi software from the installation CD (refer to page 19).
4. If the PC3320 card has not been pre-activated, use the Activation Wizard to configure the PC3320 card (as described in "Activation" on page 21).

Before you begin the installation process, ensure your PC is running a supported operating system and meets the hardware requirements described below.

System requirements

The PC3320 wireless network card is supported on:

- Windows 98 / 98 SE
- Windows Me
- Windows 2000 with Service Pack 1 or later (Service Pack 4 is recommended)
- Windows XP (Home and Professional versions)

To install the PC3320 card, you require these system resources:

Table 4-1: System Resource Requirements

Card Slots	1 Type II PCMCIA (PC Card) Slot
Communications Ports	1 Available
Disk Drive	CD-ROM (for installation only)
I/O Resources	1 IRQ, 40 bytes I/O Space
Memory	10 MB
Disk Space	2 MB

PC3320 card software installation procedures

This section provides detailed installation instructions.

Note: A driver is software that provides the interface between a device (such as the PC3320 card) and the operating system on your PC (such as Windows 98).

To install Mobile Connection Manager and the PC3320 card driver:

Note: Users of Windows 2000 must be logged in with administrative privileges to install the PC3320 card software. Users of Windows XP may require administrative privileges, depending on the XP installation.

1. If the installation CD is not already in your CD-ROM drive, insert it. The CD should autostart and display the Mobile Connection Manager Setup window.
If the CD does not autostart, select **Start > Run** and enter **d:\launch.exe** where **d** is the drive letter of your CD-ROM drive.
2. From the CD startup window, select **PC3320 Notebook Software Installation** to launch the InstallShield® Wizard.
3. Follow the instructions in the window, and click **OK**.
4. Use the **Next** and **Back** buttons to navigate through the wizard noting the following:
 - You must click **Yes** to indicate your acceptance of the terms of the license agreement to proceed with the installation.
 - Use the default settings for the Destination Folder unless you have special requirements and an advanced understanding of PC configuration.
5. If you are running Windows XP, a window indicates that the driver files will be copied to your notebook. Click **OK** and click **Continue Anyway** on the Software Installation window if it appears. The window may appear more than once; the PC3320 card is a multifunction card.

Note: Do not forcefully connect the antenna, or forcefully insert the PC3320 card. This may damage connector pins. See page 20 for instructions on removing the PC3320 card.

6. Click **OK** when you are prompted to insert the PC3320 card. Attach the antenna and insert the PC3320 card into your PC Card slot (refer to page 20).

Note: For Windows 98, and Me Users: If your computer has a built-in network adapter, your computer may appear to have stopped responding during the card detection process. The operating system is resolving resource issues related to your built-in adapter and the PC3320 card. **Do not abort the installation process.** Allow several minutes for the process to complete.

7. If your operating system is Windows 98 or Me, restart your PC from the **Start** menu.

Note: Windows 98 and Me users: If your computer has a built-in network adapter, another long delay occurs the first time the PC3320 card is inserted after this restart. Subsequent insertions of the card will not experience this delay.

On completion of this step, Mobile Connection Manager and the PC3320 card driver are installed.

You may now install the Venturi compression software if desired. See “Venturi™ Software Installation” on page 19.

Venturi™ Software Installation

To install the Venturi™ compression software:

Note: Users of Windows 2000 must be logged in with administrative privileges to install the Venturi software. Users of Windows XP may require administrative privileges, depending on the XP installation.

1. **If the PC3320 Wireless Network Card screen is not displayed:**
If the installation CD is already in your CD-ROM drive, select **Start > Run** and enter **d:\launch.exe** (where **d** is the drive letter of your CD-ROM drive) to display the startup menu. Otherwise, insert the CD in your CD-ROM drive. (The CD should autostart and display the menu.)
2. From the PC3320 Wireless Network Card screen, select **Venturi Software Installation**.
The InstallShield® Wizard starts.
3. Use the **Next** and **Back** buttons to navigate through the wizard noting the following:
 - You must click **Yes** to indicate your acceptance of the terms of the license agreement to proceed with the installation.

- Use the default settings for the Destination Location unless you have special requirements and an advanced understanding of PC configuration. (The Destination Location dictates where the software is installed.)
- You must restart your PC before you can use the software. Click **Finish** to close the last screen of the wizard and to restart your PC.

On completion of this step, the Venturi software is installed and, after your PC reboots, you can proceed to configure the PC3320 card to use your account (if it was not pre-activated). See “Activation” on page 21.

Card insertion and removal

Inserting the PC3320 card

To insert the PC3320 into a notebook:

1. Attach the antenna to the circular gold connector on the end of the PC3320 card. DO NOT FORCE.
2. With the picture label facing up, insert the PC3320 card into the slot.

When you insert the PC3320, the following should occur:

- If sound effects are enabled, the PC beeps.
- The PC Card icon appears in the status area, if it is not already displayed for another card, (and unless the feature has been disabled).

The PC3320 card is powered as soon as you insert it.

Removing the PC3320 card

To remove the PC3320 card:

1. Close Mobile Connection Manager if it is open.
2. Click the PC Card icon in the status area to display the option to stop the card.
3. Click “Stop CDMA 1X Parent” (Windows 98, 2000, or Me) or “Safely remove CDMA 1X Parent” (Windows XP).
4. If a dialog box appears notifying you that it is safe to remove the card, click **OK**.
5. Use the ejector to remove the PC3320 card from the slot. Do not pull the PC3320 card out by the antenna.

5: Activation

- Manual Activation
- Automated Activation

Account configuration procedures

The final step to making the PC3320 card operational is configuring it to use your CDMA service provider account. The process of activation configures your PC3320 with the required account parameters (phone number, etc.).

If you purchased a pre-activated PC3320 card, this step is not necessary. Once the application software and driver are installed, the PC3320 card is ready for use.

Note: The PC3320 can support two accounts (phone numbers), allowing, for example, one account for business and another for personal use.

Otherwise, you must use the Activation Wizard to activate and configure your account.

Activation Wizard

The Activation Wizard walks you through the process of configuring an account. The process and options vary based on the service provider. The wizard supports Automated Activation in addition to Manual Activation where the service provider supports them.

This section is a guide only. Consult the Quick Start Guide, and follow the directions on screen and instructions given by your service provider representative.

To activate an account and configure your PC3320 card for use:

1. Attach the antenna and insert the PC3320 card into your PC Card slot (refer to "Inserting the PC3320 card" on page 20).
2. Start Mobile Connection Manager by selecting:
Start > Programs > Verizon Wireless > Mobile Connection Manager
3. Mobile Connection Manager should detect that the PC3320 card has not been activated and automatically start the Activation Wizard. If it does not start the wizard, in Mobile Connection Manager select:
 - **Tools > Activation Wizard**
4. The wizard presents a selection window, offering the activation methods supported by your service provider:
 - **Manual Activation** involves entering your account information into the appropriate fields in the wizard using information from your package or product shipment.
 - **Automated Activation** involves the PC3320 placing a call to a special number at the service provider. Follow onscreen prompts.

5. To begin activation of the PC3320, select the method and click **Next**.

Manual activation

Verizon has provided the required information on your package or with the product shipment.

1. Select the **Manual Activation** radio button and click **Next**.
2. The wizard prompts for your activation code.
Enter six zeroes (000000) then click **Next**.
3. Enter the phone number provided with your package. Enter the IMSI. Click **Next**.
4. Enter the SID (System ID) provided with your package. Click **Next**.
5. Click **Finish** on the final window of the wizard.

On completion, the PC3320 card is ready for use. The next chapter explains how to use Mobile Connection Manager to manage and monitor your connections.

Automated activation

To use automated activation:

1. Select the **Automated Activation** radio button and click **Next**.
2. The wizard advises that it will make a network connection, dialing the displayed number. Leave the number unchanged unless told by a technical service representative to enter a different value. Click **Next**.
3. Follow any instructions or prompts provided to activate the card.

Mobile Connection Manager displays the activation progress in the call status area. When the process is complete you should see the message "Ready to Connect". At this point your PC3320 card is ready to use. The next chapter explains how to use Mobile Connection Manager to manage and monitor your connections.

Note: If you do not get the "Ready to Connect" message, retry the process. If the process continues to fail, use manual activation or contact your service provider.

6: Mobile Connection Manager™ Basics

- Starting and Closing Mobile Connection Manager
- Components of the Mobile Connection Manager Window
- Interpreting Icons
- Online Help
- Troubleshooting

Mobile Connection Manager is the application that allows you to manage and monitor the connection between the PC3320 wireless network card and the CDMA network. You use Mobile Connection Manager to:

- Determine your signal strength, roaming status, 1X high-speed data availability, and other network connection parameters
- Initiate data calls
- View call statistics
- Receive and send SMS messages
- Customize features and options

Anytime you use the PC3320 card you must run Mobile Connection Manager. Once you make a connection in Mobile Connection Manager, you can launch whatever application you want to use (such as your web browser or e-mail application).

Starting and closing Mobile Connection Manager

You can launch Mobile Connection Manager by:

-  Double-clicking the Mobile Connection Manager icon on your desktop
- Selecting **Start > Programs > Verizon Wireless > Mobile Connection Manager**

The standard Windows control buttons in the upper right corner of the window are used to minimize or close Mobile Connection Manager. When minimized, Mobile Connection Manager does not appear as a taskbar button. Instead, an icon is shown in the status area, usually at the right end of the taskbar. (See “Minimized Icons” on page 28.)

Components of the Mobile Connection Manager window

The window has three areas that display messages and icons: the Connection Status Area, Call Status Area, and Indicator Area.

The window allows you to connect and disconnect Internet and dial-up data services.

A menu bar is located on the upper left side of the window.

Windows control buttons are in the top right corner.

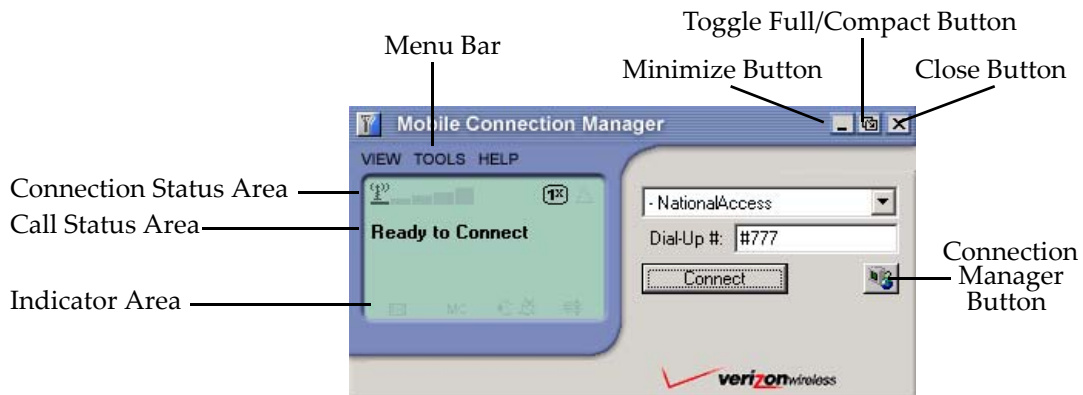



Figure 6-1: Mobile Connection Manager

For a detailed description of each option in the menus, see the online Help.

Window controls

- The **Minimize** button closes the Mobile Connection Manager window but leaves the application running. When Mobile Connection Manager is minimized, the Mobile Connection Manager icon in the status area can be used to determine the PC3320 card status. (See page 28.) This icon replaces a taskbar button for Mobile Connection Manager.

Once minimized, you can redisplay the Mobile Connection Manager window by selecting the Mobile Connection Manager icon in the status area. You can also restore the window by double-clicking the desktop shortcut or launching Mobile Connection Manager from the Start menu.

- The **Toggle Full/Compact** button  is used to switch between the full Mobile Connection Manager window and the compact view:



The compact view allows you to see connection status and indicators while using less space on the desktop.

You must use full view to make calls, data connections, disconnect, or access Mobile Connection Manager features. To return to full view, select the view toggle button in the top right.

- The **Close** button is used to exit Mobile Connection Manager.

Docking

You can set the Mobile Connection Manager window to “jump” to the edge of your screen when you move the window close to an edge. This lets you easily position Mobile Connection Manager in a corner of the screen.

- Select **View > Docking**

Always On Top

You can set Mobile Connection Manager to always display in front of other windows. This allows you to monitor connection status while using another maximized application, such as your web browser.

- Select **View > Always On Top**

Interpreting icons

Mobile Connection Manager makes extensive use of icons to indicate status and events. The various icons are described in the following sections on the display areas of Mobile Connection Manager.

Connection Status Area

Note: Optimal signal strength is obtained when the antenna is perpendicular to the PC3320 card.



The Connection Status Area uses the icons shown in Table 6-1.

Table 6-1: Connection Status Area icons








Icon	Meaning
 	<p>The Signal Strength indicator uses bars to show the intensity of the radio signal. The number of bars increases as signal strength increases to a maximum of five bars.</p> <p>When the bars are dimmed and the antenna icon is crossed out, no connection is possible for one of these reasons:</p> <ul style="list-style-type: none"> No antenna is attached You are outside the CDMA network coverage area The signal strength is too weak A network or account problem is preventing the PC3320 from obtaining service
	<p>The 1X indicator shows whether 1X is available in this area.</p>
	<p>The Roaming Status indicator shows whether you are roaming within a “preferred” roaming area.</p> <p>When the indicator is off (gray), you are within the local coverage area of your service provider. When the indicator is on (solid black), you are in a “preferred” roaming area. When the indicator is blinking, you are within the coverage area of a CDMA network but not in a “preferred” roaming area.</p> <p>Your coverage area and account charges depend upon your service provider and the type of account you have. There may be surcharges for roaming service that vary based on whether you are in a preferred or non-preferred roaming area. If there is no roaming agreement between your service provider and the local carrier, you may be unable to complete calls.</p>
<p>The In Use indicator shows whether a call is in progress. No icon is displayed when the PC3320 card is idle. Otherwise, one of these icons is displayed:</p>	
	<p>A circuit switched data call is in progress.</p>

Table 6-1: Connection Status Area icons (cont.)

Icon	Meaning
	A high-speed (1X) packet data call is in progress.
	A fatal error has occurred and the PC3320 card is inoperable. (This may be resolved by closing Mobile Connection Manager and restarting your PC.)

Call Status Area

The Call Status Area displays messages related to the status or progress of a connection.


Where a duration timer is shown, timing begins when the call is initiated—not from the time the call is fully connected. This is a measure of the time the PC3320 has been using the radio channel (a wireless network resource).

“PowerSave - Click this display to exit” indicates that the PC3320 card could not find a CDMA system within a 15 minute interval. To conserve power, the PC3320 card reduces channel scanning to once every three minutes. To force the PC3320 card out of PowerSave mode, click in the Call Status Area. The PC3320 card performs a channel scan and, if no network is detected, returns to PowerSave mode.

Indicator area

The Indicator area displays icons that notify you when you receive messages and indicate whether certain options and features are enabled. The icons are black when “on” and gray when “off”.

Table 6-2: Indicator Area icons





Icon	Meaning
	The SMS message indicator shows whether you have unread messages. A blinking icon indicates that there are one or more urgent or important unread messages. To display the Mobile Messenger window (in which the messages are displayed) select Tools > Mobile Messenger... or double-click the icon.

Minimized Icons

Mobile Connection Manager displays an icon in the Windows status area (which is usually located in the lower right corner of your screen). The status area icon indicates your connection status or notifies you when you have SMS messages.



Table 6-3: Status Area icons

Icon	Meaning
	You are not in service on the CDMA network.
	You are in service on the CDMA network but have no active data connection. The number of red bars indicates the signal strength.
	You have an active data connection. The number of green bars indicates the signal strength.
	You have unread SMS message(s).

Only one icon can be displayed at a time. The priority of icons, from highest to lowest, is:

- SMS message(s)
- Active or inactive connection.

For example, if you have unread SMS messages, and then establish a data connection, the icon still displays as an unread SMS message.

Online Help

Mobile Connection Manager includes extensive online help to provide operating hints and step-by-step instructions for getting the most from your PC3320 wireless network card.

You can access online help in several ways:

- Press <F1> in any window.
- Click the **Hints** button available in many windows.
- Use Windows Explorer to navigate to **Program Files > Verizon Wireless > Mobile Connection Manager > CM.chm**. Double-click to open the help file.
The help file has a table of contents and an index.

Troubleshooting

The online help includes descriptions of most common error messages. Look in the table of contents under Troubleshooting.

For help with other problems:

- Contact your service provider.

7: Technical Specifications

- LED Operation
- Radio Frequency and Electrical Specifications
- Environmental Specifications

This chapter describes the function of the LED, and provides technical product data for the PC3320 wireless network card.

LED operation

The PC3320 has a single red/green LED on the antenna end of the card. The LED operates as follows:

Table 7-1: LED operation

LED Behavior	Indicates
Solid amber*	The PC3320 card is powering up.
Blinking amber	The PC3320 card is searching for a channel.
Solid green	A call is in progress.
Blinking green	The PC3320 card has acquired a channel and is in idle mode (no call is in progress).
Solid red	An error has occurred.

* Amber is used to describe the color of the LED when both red and green are lit.

Radio frequency and electrical specifications

Table 7-2: Radio frequency and electrical specifications

Approvals	Compliant with: IS-95A, IS-95B, IS-98D, IS-707A, IS707A-1, CDMA Developers Group FCC (ID: N7NACRD555) Industry Canada
Voltage	+5 Vdc from PCMCIA Slot
Current	Maximum: 680 mA Typical: 150 mA
Transmitter Power	200 mW (+23 dBm)
Transmit	PCS: 1850 to 1910 MHz Cellular: 824 to 849 MHz
Receive	PCS: 1930 to 1990 MHz Cellular: 869 to 894 MHz
Channel Spacing	1.25 MHz
Freq. Stability	±150 Hz

Environmental specifications

Table 7-3: Environmental specifications

Operating Temp.	-30 to +60°C (ambient, outside PCMCIA enclosure)
Storage Temp.	-30 to +85°C
Humidity	95%, non-condensing
Vibration	15 g peak 10 to 2000 Hz (non-operating)
Drop	30" (76.2 cm) on to vinyl covered concrete

Appendix A: Glossary

1X

One Times Radio Transmission Technology (the "one times" refers to the frequency spectrum)

bps

bits per second—The actual data speed over the transmission medium. See also baud.

CDMA

Code Division Multiple Access—A wideband spread spectrum technique used in digital cellular, personal communications services, and other wireless networks. Wide channels (1.25 MHz) are obtained through spread spectrum transmissions, thus allowing many active users to share the same channel. Each user is assigned a unique digital code, which differentiates the individual conversations on the same channel.

CDMA 1X

Also known as 1X, this is a high-speed standard for CDMA cellular communications.

circuit switched cellular

V.xx modem communications over a cellular network. It uses a dedicated connection circuit, in contrast to packet-switched. The user is charged by the carrier for the duration of the connection.

ESN

Electronic Serial Number—The unique serial number assigned to the modem for cellular network use.

FCC

Federal Communications Commission—The U.S. federal agency that is responsible for interstate and foreign communications. The FCC regulates commercial and private radio spectrum management, sets rates for communications services, determines standards for equipment, and controls broadcast licensing. Consult www.fcc.gov.

host

1. A computer that uses a modem or a similar device to answer a calling computer.
 2. A source or destination in the communication network.
 3. A computer that contains data or files to be accessed by client computers. Also known as a server.
-
-

IMSI

International Mobile Station Identity—A 15-digit number used to identify the mobile device to the base station.

IS

Interim Standard—After receiving industry consensus, the TIA forwards the standard to ANSI for approval.

IS-95

The standard for CDMA.

kbps

kilobits per second—Actually 1000, not 1024, as used in computer memory size measurements of kilobytes.

LED

Light Emitting Diode—A semiconductor diode that emits visible or infrared light.

MHz

Mega-Hertz—One million cycles per second.

packet

A short fixed-length block of data including a header that is transmitted as a unit in a communications network.

PC Card™

Add-in memory and communications cards for portable computers. PC Card is a trademark of the PCMCIA.

PCMCIA

Personal Computer Memory Card International Association—The organization that standardizes PC Cards.

PCS

Personal Communications Services—A cellular communication infrastructure that uses a different frequency range than AMPS.

QNC

Quick Net Connect—A CDMA connection method that reduces call setup time for circuit switched connections to the Internet.

roaming

A cellular subscriber is in an area where service is obtained from a cellular service provider that is not the subscriber's provider.

SMS

Short message services—A feature that allows users of a wireless device on a wireless network to receive or transmit short electronic alphanumeric messages (up to 160 characters, depending on the service provider).

TIA

Telecommunications Industry Association—A standards setting trade organization, whose members provide communications and information technology products, systems, distribution services and professional services in the United States and around the world. Consult www.tiaonline.org.

Index

Numerics

1X, 8, 10
indicator, 26

A

account
activation, 15
configuration, 21
activation
automated, 22
manual, 22
Activation Wizard, 21
always on top, 25
antenna
care and maintenance, 13

C

call status area, 27
care and maintenance, 13
CDMA network
frequency bands, 10
service providers, 10
circuit switched data, 8
close button, 25
compact view, 25
connection status
indicator, 28
connection status area, 26
coverage, 11

D

data
circuit switched, 8
dial-up, 8
high-speed, 8
Quick 2 Net, 8
dial-up data, 8
disk space
notebooks, 18
docking, 25
drivers
description, 10

E

ESN, 16

F

frequency bands, CDMA network, 10
full view
description, 24
toggle button, 25

H

help, 28
high-speed packet data, 8

I

I/O space (input/output space), 18
icons
connection status, 26
indicator area, 27
minimized, 28
in use indicator, 26
indicator area, 27
indicators
connection status, 28
SMS messages, 27, 28
inserting the PC3320, 20
installation, 18
Internet, 8, 8
IRQ (interrupt request), 18
IS-95, 10

M

memory
notebooks, 18
minimize button, 24
minimized icons, 28
Mobile Connection Manager, 10

N

NationalAccess high-speed packet data, 8
not in service indicator, 28
notebooks
installing the software, 17–20
removing the PC3320, 20

O

online Help, 28
operating hints, 28

P

PowerSave, 27
pre-activation, 15

Q

Quick 2 Net, 8

R

removing the PC3320, 20
roaming
 definition, 11
 indicator, 26

S

signal strength
 indicator, 26
 obtaining optimal, 13
SMS message indicator, 27, 28
software, 10
software installation, 17–20
system requirements
 notebooks, 17

T

taskbar icons, 28
troubleshooting, 29